

66 and the other engaging the clamp cleats 48 on the truck clamp surface 46 of the side rails 14. The clamp cleats 48 provide a roughened surface for the attachment clamp 50 to engage ensuring a secure attachment of the present invention and the tonneau cover 12 to the pickup truck box 66.

The longer portion of the L-shape of the side rails 14 forms the side rail component mount surfaces 44 to which the mounting apparatus for the tensioning rail 16 and the tensioning screw 18 are attached. Additionally, each of the side rails 14 also have an upwardly oriented diagonal surface 52 which serves as both the outward cosmetic edge of the side rails 14 and as guides or frames within which the tonneau cover 12 is stretched. Additionally, the tensioning rail 16 is also equipped with two tensioning rail end caps 54 which fit over each end of the tensioning rail 16 just inside of the side rail diagonal surface.

The method of operation of the tonneau cover tension adjuster apparatus 18 is further illustrated in FIGS. 6 and 7. To reduce the tension or loosen the tonneau cover 56 for either its removal or installation, the user rotates the screw adjustment knob 20 in a clockwise manner which serves to pull the tensioning rail 16 back through the tensioning screw 18 and the tensioning rail attachment block 30 (the loosening movement accomplished by this operation is illustrated by the directional arrows labeled as 60). Conversely, to obtain a tensioned or taught tonneau cover 58, when latched one simply reverses this process by rotating the screw adjustment knob 20 in a counter-clockwise manner which serves to force the tensioning rail 16 forward through the tensioning screw 18 and tensioning rail attachment block 30 (the tensioning movement accomplished by this operation is illustrated by the directional arrows labeled as 62).

Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred versions contained herein.

What is claimed is:

1. An adjustable assembly for a cargo box cover for use on a cargo box having upwardly extending left and right side walls, a front wall and a rear end gate wall, said walls defining the boundaries of the cargo box, the cargo box cover having a left and right rail connected to said left and right side wall, an elongate tensioning rail having a left and right end said tensioning rail extending from said left rail to said right rail and further having a cover fixedly attached along said tensioning rail, said adjustable assembly comprising:

- a left and right block means connected to said left and right rail;
- a left and right attachment block means connected to said left and right end of said tensioning rail; and
- an adjustable connection means for connecting said tensioning rail to said left and right rail.

2. An adjustable assembly as in claim 1 wherein each of said left and right block means connected to said left and right rail comprises a front and rear block section connected to a base block section so as to define a space between said front and rear block section, said front and rear block sections further defining a hole in an aligned orientation so as to pass through said front and rear block section across said space between said front and rear block sections.

3. An adjustable assembly as in claim 2 wherein each of said left and right attachment block means comprises an attachment block section having an elongate threaded tension screw fixedly attached to said attachment block section and extending through said front and rear block sections spanning said space between said front and rear block section.

4. An adjustable assembly as in claim 3 further comprising a screw adjustment knob between said front and rear block section defining an inner threaded hole for receiving said threaded tension screw.

5. An adjustable assembly as in claim 4 further comprising a graduated measuring scale on said left and right rail so as to accurately adjust said left and right side of said tensioning rail in respect to said left and right rail.

6. An adjustable assembly as in claim 5 wherein said hole defined by said front and rear block sections is of a larger diameter than said threaded tension screw.

7. An adjustable assembly as in claim 1 wherein said left and right block means is fixedly connected to said left and right end of said tensioning rail and said left and right attachment block means is fixedly connected to said left and right rail.

8. An adjustable cover for a cargo box that comprises upwardly extending left and right side walls, a front wall and a rear end gate wall said walls defining the boundaries of the cargo box, the adjustable cover assembly comprising:

- a left and right rail connected to said left and right side wall;

- an elongate tensioning rail having a left and right end said tensioning rail extending from said left rail to said right rail;

- a left and right block means connected to said left and right rail;

- a left and right attachment block means connected to said left and right end of said tensioning rail; and

- an adjustable connection means for connecting said tensioning rail to said left and right rail.

9. An adjustable cover for a cargo box as in claim 8 wherein each of said left and right block means connected to said left and right rail comprises a front and rear block section connected to a base block section so as to define a space between said front and rear block section, said front and rear block sections further defining a hole in an aligned orientation so as to pass through said front and rear block section across said space between said front and rear block sections.

10. An adjustable cover for a cargo box as in claim 9 wherein each of said left and right attachment block means comprises an attachment block section having an elongate threaded tension screw fixedly attached to said attachment block section and extending through said front and rear block sections spanning said space between said front and rear block sections.

11. An adjustable cover for a cargo box as in claim 10 further comprising a screw adjustment knob between said front and rear block section defining an inner threaded hole for receiving said threaded tension screw.

12. An adjustable cover for a cargo box as in claim 11 further comprising a graduated measuring scale on said left and right rail so as to accurately adjust said left and right side of said tensioning rail in respect to said left and right rail.

13. An adjustable cover for a cargo box as in claim 12 wherein said hole defined by said front and rear block sections is of a larger diameter than said threaded tension screw.

14. An adjustable cover for a cargo box as in claim 8 wherein said left and right block means is fixedly connected to said left and right end of said tensioning rail, and said left and right attachment block means is fixedly connected to said left and right rail.

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15. (New) An adjustable assembly for a tonneau cover used to cover a pickup truck cargo box, the cargo box having a plurality of upwardly extending walls, said plurality of upwardly extending walls including left and right side walls, a front wall and a rear end gate wall, said plurality of upwardly extending walls at least partially defining an interior compartment of the cargo box, the adjustable assembly comprising:
- 15 15 left and right side rails connected to said left and right side walls, respectively;
- 20 20 an elongate tensioning rail having left and right ends, said tensioning rail extending from the left side rail to the right side rail, the tonneau cover attached to the tensioning rail;
- 25 25 left and right side rail attachment bracket mechanisms connected to said left and right side rails, respectively; and
- 30 30 left and right tensioning rail attachment members engaged with said tensioning rail; wherein each of said left and right side rail attachment bracket mechanisms
- 35 35 include a threaded screw member, and each of the threaded screw members are positioned and arranged such that a force can be placed on the elongate tensioning
- 40 40 rail by each of the threaded screw members as said screw member is adjustably manipulated to drive the tensioning rail away from the respective attachment bracket
- 45 45 mechanism, thereby placing greater tension on the tonneau cover.

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16. (New) The adjustable assembly of claim 15, wherein the tensioning rail includes a tensioning rail attachment chamber and each of said left and right tensioning rail attachment members is engaged within the tensioning rail attachment chamber.
17. (New) The adjustable assembly of claim 16, wherein each of said left and right tensioning rail attachment members extends below the side rail with which it is engaged such that the tensioning rail is restrained from being lifted away from the respective side rails when the attachment members are engaged with the respective side rails.
18. (New) The adjustable assembly of claim 15, wherein each of the pair of threaded screw members is engaged in coaxially aligned, reciprocally threaded openings in each of the respective side rail attachment bracket mechanisms.
19. (New) An adjustable cover assembly for a cargo box, the cargo box including upwardly extending left and right side walls, a front wall and a rear end gate wall, the adjustable cover assembly comprising:
- left and right side rails connected to said left and right side walls, respectively;
- a tonneau cover having forward and rearward ends;

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- an elongate tensioning rail having
left and right ends, said elongate
tensioning rail extending from said
left side rail to said right side rail, the
5 forward end of the tonneau cover
being secured to the elongate
tensioning rail;
- left and right side rail attachment
10 bracket mechanisms connected with
said left and right side rails,
respectively; and
- left and right tensioning rail
15 attachment members engaged with
said tensioning rail; wherein each of
said left and right side rail
attachment bracket mechanisms
include a threaded screw member,
- 20 and each of the threaded screw
members are positioned and
arranged such that a force can be
placed on the elongate tensioning
rail by each of the threaded screw
- 25 members as said screw member is
adjustably manipulated to drive the
tensioning rail away from the
respective attachment bracket,
thereby placing greater tension on
- 30 the tonneau cover.
20. (New) The adjustable
assembly of claim 19, wherein the
tensioning rail includes a tensioning
35 rail attachment chamber and each
of said left and right tensioning rail
attachment members is engaged
within the tensioning rail attachment
chamber.
- 40 21. (New) The adjustable
assembly of claim 20, wherein each
of said left and right tensioning rail
attachment members extends below
45 the side rail with which it is engaged
such that the tensioning rail is

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- restrained from being lifted away
from the respective side rails when
the attachment members are
engaged with the respective side
rails.
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22. (New) The adjustable assembly of claim 19, wherein each of the pair of threaded screw members is engaged in coaxially aligned, reciprocally threaded openings in each of the respective side rail attachment bracket mechanisms.
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23. (New) An apparatus for varying the position of an end rail of a tonneau cover attachment frame used to secure a tonneau cover to a pickup truck cargo box, the attachment frame including at least one end rail and opposing left and right side rails, the tonneau cover being secured to the end rail, the
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24. (New) The apparatus of claim 23, wherein the first tensioning

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- screw is movable in a direction generally parallel to the side rail and wherein the end rail is slidably engaged with the opposing left and
- 5 right side rails and movable with respect thereto in a generally orthogonal, constrained manner.
25. (New) The apparatus of claim
10 23, further comprising a second adjustment block mechanism, the adjustment block mechanism being attached to the other of said left and right side rails, and
- 15 a second tensioning screw, the second tensioning screw operatively connected to the second adjustment block mechanism and movable with respect thereto, with
- 20 the second tensioning screw configured and arranged to operatively contact the end rail; wherein movement of the second tensioning screw with respect to the
- 25 second adjustment block mechanism, in a direction toward the end rail, varies the position of the end rail with respect to the other side rail.
- 30 26. (New) The apparatus of claim
25, wherein the second tensioning screw is movable in a direction generally parallel to the side rail.
- 35 27. (New) An apparatus for shifting the position of a slideable end rail of a tonneau cover attachment frame that includes at
- 40 least one end rail and parallel left and right side rails, the tonneau cover being attached to the end rail, wherein the end rail is slidably connected to the parallel left and
- 45 right side rails and movable with respect thereto in a generally

orthogonal, constrained manner, the apparatus comprising:

- 5 a first adjustment block
5 mechanism, the first adjustment
5 block mounted to the left side rail
5 and configured to operably contact
5 the end rail and, upon manipulation
5 thereof, shift the position of the end
10 rail with respect to the left side rail in
10 a direction away from the first
10 adjustment block mechanism; and,
- 15 a second adjustment block
15 mechanism, the second adjustment
15 block mounted to the right side rail
15 and configured to operably contact
15 the end rail and, upon manipulation
15 thereof, shift the position of the end
20 rail with respect to the right side rail
20 in a direction away from the second
20 adjustment block mechanism.
- 25 28. (New) A shifting apparatus
25 which operatively contacts an end
25 rail of a tonneau cover frame for
25 attaching a tonneau cover to a
25 cargo box of a pickup truck, the
25 tonneau cover frame having parallel
30 left and right side rails and an end
30 rail, the tonneau cover being
30 attached to the end rail, the
30 apparatus comprising:
- 35 a first adjustment block
35 mechanism, the first adjustment
35 block attachably mounted to the left
35 side rail and configured to operably
35 contact the end rail and, upon
40 manipulation thereof, shift the
40 position of the end rail with respect
40 to the left side rail; and,
- 45 a second adjustment block
45 mechanism, the second adjustment
45 block attachably mounted to the

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- right side rail and configured to operably contact the end rail and, upon manipulation thereof, shift the position of the end rail with respect to the right side rail wherein the end rail is slidingly engaged with the parallel left and right side rails and movable with respect thereto in a constrained manner.
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- 10 29. (New) The shifting apparatus of Claim 28, wherein each of the first and second adjustment block mechanisms include a threaded screw members that is positioned and arranged such that a force can be placed on the end rail by each of the threaded screw members as said screw member is adjustably manipulated to drive the end rail away from the respective adjustment block mechanism, thereby placing greater tension on the tonneau cover.
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- 30 30. (New) An adjustable assembly for a tonneau cover used to cover a pickup truck cargo box having a plurality of upwardly extending walls, said plurality of upwardly extending walls including left and right side walls, a front wall and a rear end gate wall, said
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- an elongate tensioning rail having left and right ends, said elongate tensioning rail extending from said

left side rail to said right side rail, the tonneau cover being attached to the elongate tensioning rail;

- 5 left and right side rail attachment block mechanisms connected to said left and right side rails, respectively; and
- 10 left and right tensioning rail attachment blocks engaged with said left and right ends of said elongate tensioning rail, respectively, and each slidably engaging the respective side rail proximate the respective ends of the elongate tensioning rail such that the elongate tensioning rail is slidably engaged with the opposing
- 15 left and right side rails and movable with respect thereto in a generally orthogonal, constrained manner; wherein the left and right side rail attachment block mechanisms
- 20 include left and right screw members adjustably contacting said tensioning rail.
- 25 31. (New) A method of maintaining an appropriate tension on a tonneau cover secured to a cargo box of a pickup truck, the pickup truck cargo box having a plurality of upwardly extending walls, said plurality of upwardly extending walls including left and right side walls, a front wall and a rear end gate wall, said plurality of upwardly extending walls at least partially defining an interior compartment of the cargo box; the method comprising:
- 30 attaching a tonneau cover and a tonneau cover attachment frame having a tonneau cover
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- 40 45

- 45 32. (New) A method of
maintaining an appropriate tension
- adjustment mechanism to the pickup truck, the tonneau cover attachment frame including left and right side rails which are connected to said left and right side walls, respectively; an elongate tensioning rail having left and right ends, said tensioning rail extending from the left side rail to the right side rail, the tonneau cover attached to the tensioning rail; left and right side rail attachment bracket mechanisms connected to said left and right side rails, respectively; the elongate tensioning rail including left and right tensioning rail attachment members engaged with said tensioning rail; wherein each of said left and right side rail attachment bracket mechanisms include a threaded screw member, and each of the threaded screw members are positioned and arranged such that a force can be placed on the elongate tensioning rail by each of the threaded screw members as each said screw member is adjustably manipulated to drive the tensioning rail away from the respective attachment bracket mechanism, thereby placing greater tension on the tonneau cover; and manipulating the respective attachment bracket mechanisms so as to drive the tensioning rail away from the respective attachment bracket mechanism, thereby placing greater tension on the tonneau cover following the step of attaching, at such time as it is desireable to place a greater tension on the tonneau cover.

on a tonneau cover secured to a cargo box of a pickup truck, the pickup truck cargo box having a plurality of upwardly extending walls, said plurality of upwardly extending walls including left and right side walls, a front wall and a rear end gate wall, said plurality of upwardly extending walls at least partially defining an interior compartment of the cargo box; the method comprising:

attaching a tonneau cover

and a tonneau cover attachment frame having a tonneau cover adjustment mechanism to the pickup truck, the tonneau cover attachment frame including left and right side rails which are connected to said left and right side walls, respectively; an elongate tensioning rail having left and right ends, said tensioning rail extending from the left side rail to the right side rail, the tonneau cover attached to the tensioning rail; left and right side rail attachment bracket mechanisms connected to said left and right side rails, respectively; the elongate tensioning rail including left and right tensioning rail attachment members engaged with said tensioning rail and positioned and arranged to sliding secure the elongate tensioning rail to the respective side rails; wherein each of said left and right side rail attachment bracket mechanisms include a threaded screw member, and each of the threaded screw members are positioned and arranged such that a force can be placed on the elongate tensioning rail by each of the threaded screw members as each said screw member is adjustably

- manipulated to drive the tensioning rail away from the respective attachment bracket mechanism, thereby placing greater tension on the tonneau cover; and
- 5 manipulating the respective attachment bracket mechanisms so as to drive the tensioning rail away from the respective attachment bracket mechanism, thereby placing greater tension on the tonneau cover following the step of attaching, at such time as it is desireable to place a greater tension on the tonneau cover.
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